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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/639,678	08/13/2003	Patrick M. Ravary	10539-12/PMdC	6128

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EXAMINER	
VANOY, TIMOTHY C	
ART UNIT	**PAPER NUMBER**
1754	

DATE MAILED: 08/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/639,678	RAVARY ET AL.	
	Examiner	Art Unit	
	Timothy C. Vanoy	1754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 August 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-20 and 23-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-20 and 23-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

The person having ordinary skill in the art has the capability of understanding the scientific and engineering principles applicable to the claimed invention. The references of record in this application reasonably reflect this level of skill.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 3-20 and 23-28 are rejected under 35 U.S.C. 103(a) as obvious over U. S. Patent 5,019,361 to Hakka.

Figure 1 and the description of figure 1 set forth in col. 10 line 45 to col. 11 line 34 illustrates what appears to be the same process for removing sulfur dioxide out of gas, comprising:

feeding a sulfur dioxide-contaminated gas (10) through a gas-liquid contact apparatus (12) where the sulfur dioxide-contaminated gas is contacted with a recycled aqueous absorbing solution (14) so as to result in an absorbing solution containing dissolved sulfur dioxide (18) and a sulfur dioxide-depleted gas stream (16);

passing the absorbing solution containing dissolved sulfur dioxide (18) through what appears to be a steam-stripping column (24) (please also see claim 18 in U. S. Patent 5,019,361) to form a regenerated absorbing solution (36);

recovering the gaseous sulfur dioxide (30) from the steam stripping column;

diverting a portion of the regenerated absorption solution (36) to a solvent purifier system (44) so as to remove heat stable salts present in the regenerated absorption solution; and

recycling the regenerated absorption solution back to the gas-liquid contact apparatus (12) via lines (38) and (14).

The difference between the applicants' claims and U. S. Patent 5,019,361 is that applicants' claims 1 and 11 require that the level of heat stable salts in the aqueous absorbing medium is adjusted so that the pH of the regenerated aqueous absorbing medium is at a level of 6 of less (whereas U. S. Patent 5,019,361 adjusts the level of

heat stable salts in the aqueous absorbing medium but doesn't appear to set forth how this effects the pH of the absorbing solution).

Col. 8 lns. 66-68 in U. S. Patent 5,019,361 reports that the pH of the absorbing medium is generally in the range of about 4 to 7.5 during the adsorption process.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to adjust the level of heat stable salts in the aqueous absorbing medium so that the pH of the absorbing medium is at a level of 6 of less, in the manner required by the applicants' claims, because col. 8 lns. 66-68 in U. S. Patent 5,019,361 reports that the pH of the aqueous absorbing solution should range from 4 to 7.5 during the absorption process and adjusting the pH of the absorbing solution to a value of 6 or less would render it ready and useful for the absorption process: please note the discussion of the *In re Wertheim* 541 F.2d 257, 191 USPQ 90 (CCPA 1976) court decision set forth in section 2144.05(I) in the MPEP 8th Ed Rev. 3 Aug. 2005 where it was determined that the overlapping portion of a claimed range and a prior art reference's range is *prima facie* obvious.

Note that the process of U. S. Patent 5,019,361 uses the same amines as the sulfur dioxide absorption agent that the applicants do, namely N, N' - bis(2-hydroxyethyl) piperazine, etc. (please see Table I set forth in col. 12 in U. S. Patent 5,019,361) and that these same amines will inherently have the same properties set forth in at least applicants' claims 7, 11 and 26.

Response to Arguments

Applicants' arguments submitted with their amendment filed on Aug. 10, 2006 with respect to the pending claims have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy C. Vanoy whose telephone number is 571-272-8158. The examiner can normally be reached on Mon-Fri 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman, can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Timothy C Vanoy
Primary Examiner
Art Unit 1754

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